The Ramtop

Fall   1995

BiZarro   by Dan Piraro
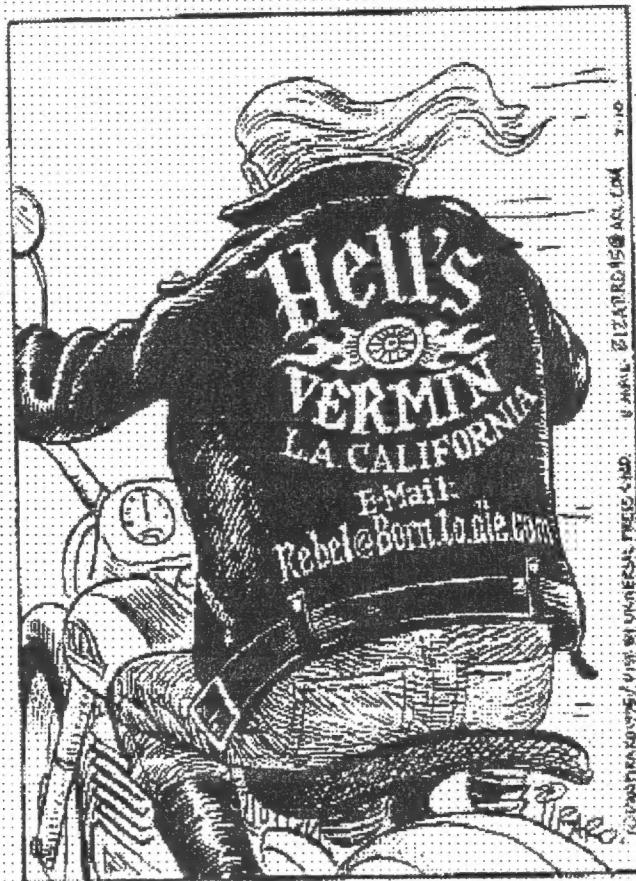
Online with Pipeline
Windows 95 and More
Dayton Computer Show Report
Caller ID Information

Frequently Asked Questions About Caller-ID

A FAQ Compiled by Padgett Peterson.

What is Caller-ID ? First ask "What is ANI" OK, What is ANI ? ANI or Automatic Number Identification is a mechanism by which the different telephone companies determine what account is to be charged for a call, This information is passed between Telcos and was originally for billing purposes and predated both SS7 (Signaling System 7) and (C)LASS (Local Area Signaling Services was the original AT&T designations, the "C" was added by Bellcore after divesture) services which make CNID or Calling Number IDentification as Caller-ID is more properly known, possible.

Since the Telcos had ANI, the decision was made to make it available to authorized parties such as 911 service and law enforcement agencies. ANI is also used to let a Telco operator know who is calling.

More recently, ANI is used to report to 800 and 900 subscribers, who made the calls they have received, in the first case so that the 800 subscriber knows who the charge is for, and so that 900 number subscribers know who to charge.

Thus while ANI is similar to CALLER-ID and may provide the same information, they are actually two different services and ANI information is not necessarily the same as what will appear on a CALLER-ID display.

Now (maybe) what is Caller-ID ? Caller-ID is a Telco offering that is a byproduct of (C)LASS services. In this case, only those numbers reported by participating exchanges are returned, exactly which are and which are not is currently (March 1994) at the Telco's discretion. The Federal Government has stated that it is their intent that nationwide CNID be available by mid-1995. The full text of this decision may be found FCC Report No. DC-2571 issued on March 8, 1994. The biggest effect of the ruling is to mandate transport of CPN (customer provided number) information between interconnecting networks eliminating the effective inter-LATA-only limitation that exists today in most areas.

Currently there are two types of Caller-ID. The first (often referred to as "basic" service) just returns the calling number or an error message and the date/time of the call.

The second ("enhanced" Caller-ID) also may return the directory information about the calling number. At a minimum, the name of the subscriber is returned (the subscriber is not the same as the caller, the phone company has no way to determine who is actually on the line).

How is the Caller-ID information provided ? As a 1200 baud, 7 data bits, 1 stop bit data stream usually transmitted following the first and before the second ring signal on the line. Note that this is not a standard Bell 212 or CCITT v22 data format so a standard modem will probably not be able to receive it. Further, the serial information exists as such only from the recipient's switch to the callee's location. Between carriers the signal exists as data packets. The signal is provided before the circuit is complete: picking up the receiver before the data stream is finished will stop/corrupt the transmission.

Currently there are two types of information returned: a "short form" which contains the date/time (telco and not local) of the call and the calling number or error message. The "long form" will also contain the name and possibly the address (directory information) of the calling phone.

The "short form" stream consists of a set of null values, followed by a two byte prefix, followed by the DATE (Month/Day), TIME (24 hour format), and number including area code in ASCII, followed by a 2s compliment checksum. Most modems/caller id devices will format the data but the raw stream looks like this :
0412303232383134333434303735353537373737xx
or (prefix) 02281334407555777 (checksum)

A formatted output would look like this: Date - Feb 28   Time -   1:34 pm   Number -

(407)555-7777

Can a Caller-ID signal be forged/altered ? Since the signal is provided by the local Telco switch and thecalling party's line is not connected until after the phone is answered, generally the signal cannot be altered from the distant end. Manipulation would have to take place either at the switch or on the called party's line. However, the foregoing applies only to a properly designed CNID unit.

For instance the Motorola M145447 chip has a "power down" option that wakes the Chip up when the phone rings for just long enough to receive, process, and deliver the CNID signal after which it shuts down until the next call. Should this option be disabled, the chip will be in a "listen always" state and it is theoretically possible to "flood" a linemaking a vulnerable box record successive erroneous numbers.

I have received a report of a device called "Presto Chango" that can transmit an extra ADSI modem tone after the call has been picked up that will cause a susceptible box to display the later information. It was also reported to me that CNID boxes marketed by US-West as their brand and made by CIDCO have been used to demonstrate the "Presto Chango" box.

What is "ID Blocking" ? Most Telco's providing Caller-ID have been required to also provide the ability for a calling party to suppress the Caller-ID signal. Generally this is done by pressing star-six-seven before making the call. In most cases this will block the next call only however some Telcos have decided to implement this in a bewildering array of methods. The best answer is to contact the service provider and get an answer in writing.

Currently this is supplied as either by-call or by-line blocking. By-Call is preferred since the caller must consciously block the transmission on each call. By-Line blocking as currently implemented has the disadvantage that the caller, without having a second caller-id equipped line to use for checking, has no way of knowing if the last star-six-seven toggled blocking on or off.

Note that blocking is provided by a "privacy" bit

that is transmitted along with the CNID information and so is still available to the Telco switch, just not to the subscriber as a CNID signal. Consequently related services such as call trace, call return, & call block may still work.

What happens if a call is forwarded? Generally, the number reported is that of the last phone to forward the call. Again there are some Telco differences so use the same precaution as above. If the forwarding is done by customer owned equipment there is no way of telling but will probably be the last calling number. Note that as specified, CNID is *supposed* to return the number of the originating caller but this is at the mercy of all forwarding devices, some of which may not be compliant.

What happens if I have two phone lines and a black box to do the forwarding ?
If you have two phone lines or use a PBX with outdialing features, the reported number will be that of the last line to dial. Currently there is no way to tell a black box from a human holding two handsets together.

I called somebody from a company phone (555-1234) but their Caller-ID device reported 555-1000. Often a company with multiple trunks from the Telco and their own switch will report a generic number for all of the trunks. There is a defined protocol for PBXs to pass true CNID information on outgoing lines but it will be a long time before all existing COT (Customer Owned Telephone) equipment is upgraded to meet this standard unless they have a reason to do so.

I run a BBS. How can I use Caller-ID to authenticate/log callers ? There are two ways. Th first utilizes a separate Caller-ID box with a serial cable or an internal card. This sends the information back to a PC which can then decide whether to answer the phone and what device should respond. Some of these are available which can handle multiple phone lines per card and multiple cards per PC.

The second (and most common) is for the capability to be built in a modem or FAX/modem. While limited to

a single line per modem, the information can be transmitted through the normal COM port to a program that again can decide whether or not to answer the phone and how. There is a FreeWare Caller-ID ASP script for Procomm Plus v2.x available for FTP from the Telecom archive. Most such software packages will also log each call as it is received and the action taken.

Of course for true wizards, there are chips available (one of the first was the Motorola MC145447) that can recognize the CNID signal and transform it into a proper RS-232 (serial) signal.

How is security enhanced by using Caller-ID over a Call Back service or one-time passwords for dial-up access ? Caller-ID has one great advantage over any other mechanism for telephone lines. It allows the customer to decide *before* picking up the receiver, whether to answer the call. Consider hackers, crackers, and phreaks. Their goal in life is to forcibly penetrate electronic systems without permission (sounds like rape doesn't it ?). They employ demon dialers and "finger hacking" to discover responsive numbers, often checking every number in a 10,000 number exchange. If they get a response such as a modem tone, they have a target and will often spend days or weeks trying every possible combination of codes to get in. With Caller-ID answer selection, the miscreant will never get to the modem tone in the first place, yet for an authorized number, the tone will appear on the second ring. Previously the best solution for dial-ups was to set the modem to answer on the sixth ring (ats0=6). Few hackers will wait that long but it can also irritate customers.

What error messages will Caller-ID return ? a) "Out of Area" - (Telco) the call came from outside the Telco's service area and the Telco either has no available information or has chosen not to return what information it has.

b) "Blocked" or "Private" - (Telco) the caller either has permanent call blocking enabled or has dialed star-six-seven for this call. You do not have to answer either.

c) "Buffer Full" - (device manufacturer) there are many Caller-ID devices on the market and exactly how they have chosen to implement storage is up to the

manufacturer. This probably mans that the divide has a limited buffer space and the device is either losing the earliest call records or has stopped recording new calls.

d) "Data Error" or "Data Error #x" - (device manufacturer) signal was received that was substandard in some way or for which the checksum did not match the contents.

e) "No Data Sent" - (device manufacturer) Signal was received consisting entirely of nulls or with missing information but a proper checksum.

Why are so many people against Caller-ID ? FUD - Fear, Uncertainty, & Doubt or 10,000,000 lemmings can't be wrong. There were some justifiable concerns that some people (battered wives, undercover policemen) might be endangered or subject to harassment (doctors, lawyers, celebrities) by Caller-ID. As mentioned above there are several legitimate ways to either block Caller-ID or to have it return a different number. It is up to the caller. The advantage is that with Caller-ID, for the first time, the called party has the same "right of refusal".

Expect yet another Telco service (at a slight additional charge) to be offered to return an office number for calls made from home. Crisis centers could return the number of the local police station.

Send your Constructive comments to: padgett@tccslr.dnet.mmc.com
Send Brickbats >nul.
Thanks for additional material to: David J. Kovan ,Robert Krten ,John Levine , David G. Lewis and Karl Voss but the mistakes are all mine- Padgett (Ignorance is curable)

Q. I assume this is something to do with the jumperless PC?
A. No. Provided you have the base address right (have you put a CRO on the lines to check if you're outputting to the right I/O addr?) Plug'N'Pray systems are very like older machines. PnP does require bi-directional ports for PnP printers which may be adding to your problems. Whatever you have across those lines better be high impedance.
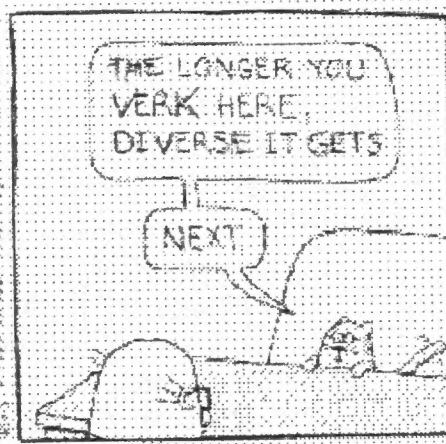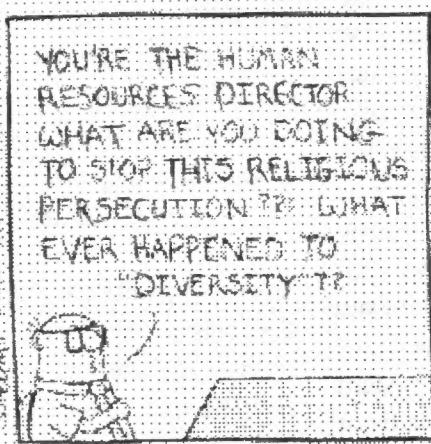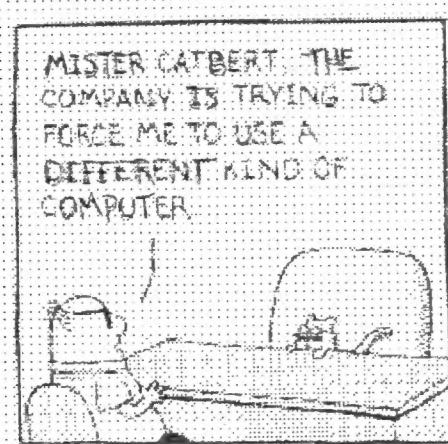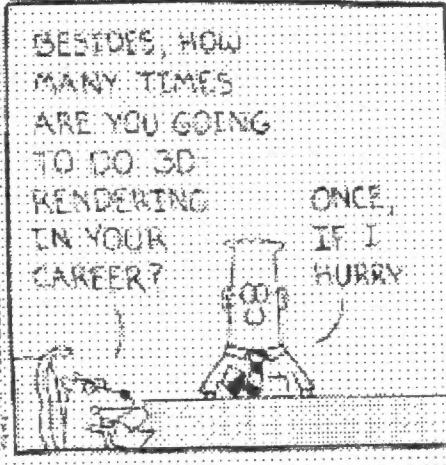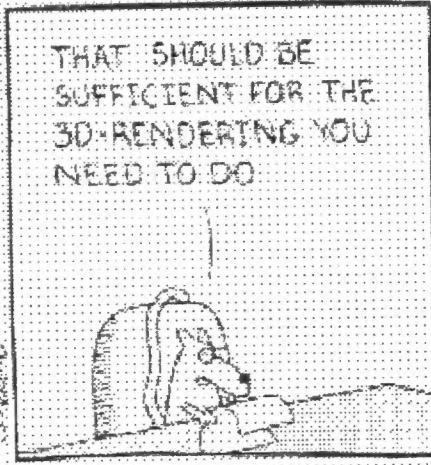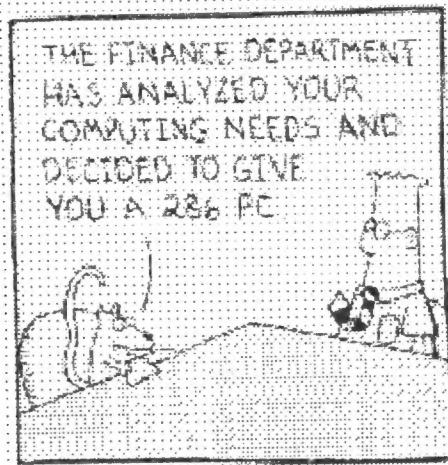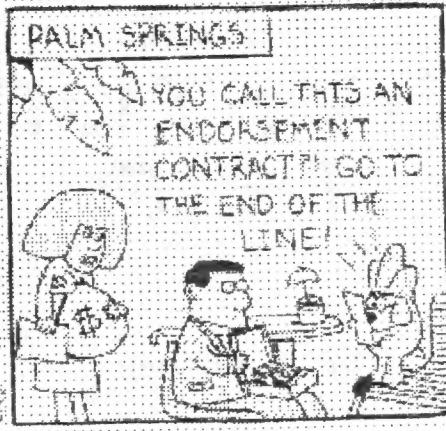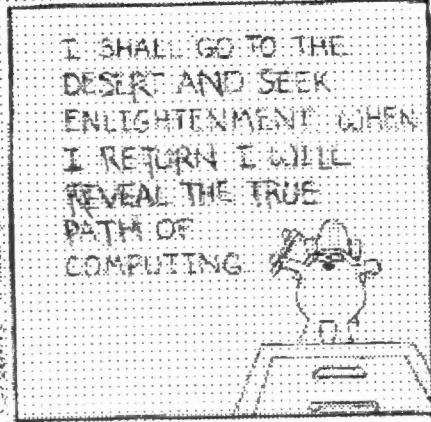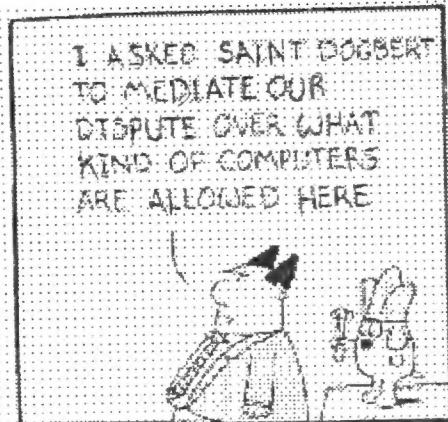
Dilbert and Scott Adams

Scott Adams cartoon Dilbet has been published in area papers like the Akron Beacon Journal and others. What is unique is that he satirizes the corporate and technological culture many of us live in. We have been following his work for quite some time and thought that we would share these with you.

Scott until recently was an employee of Pacific Bell which he used for story ideas. He also has an online site for Dilbert at http://www.unitedmedia.com/comics/dilbert/ and recieves E-Mail at ScottAdams@AOL.COM. He welcomes story ideas and comments. If you really become a fan you can join Dogbet's New Rulling Class. He has published the following books: "Build a Better Life by Stealing Office Supplies" (new material about working at a big company), ,"Always Postpone Meetings with Time-Wasting Morons" ,"Clues for the Clueless" "Shave the Whales" , "Bring Me the Head of Willy the Mailboy" and "It's Obvious You Won't Survive By Your Wits Alone" Due Out this Fall.

THE DAYTON TRIP

by James G. DuPuy

Before I write about this years over dose of computers at Dayton, I would like to take a few minutes of your time to reminisce on past shows. The first show I attended was in Cincinnati. I thought it was the best thing ever! It was great for me since I finally got that disk drive for my 2068. It was so neat to just have the opportunity to see so many other people that were interested in the same type of computer that I was. Also it was so nice to match up faces with letters I had received for years.

The next show was in Indianapolis. Again, seeing those with a common interest made the trip a real joy. I picked up lots of good stuff for my 2068 that year. This show stood out in my mind because I was fortunate enough to meet and talk to John Oliger. (Oliger disk system for the 2068) The last show I attended that was geared for the Sinclair/Timex computers was here at the Beck center. We had some very interesting seminars. There were several other shows for Timex/Sinclair but things happened that prevented me from going. One of which was that I got an IBM compatible. I still have my complete 2068 system which still works! I still value those friends made from the Sinclair community that I met at the shows and through the user groups..

The next show I attended was Dayton '93. I was totally awed by the shear size of it all. Instead of a few hundred people and 20 to 40 vendors, there were thousands of people and over a hundred vendors! Still, the high point for me was seeing old friends from the Sinclair days. One thing I really liked about that show was there were so many vendors selling electronic components, tools, and the like. I have never been one to make a snap decision to spend over a thousand bucks on anything so I was not looking to buy a system. The 94 Dayton show had less vendors selling components and seemed to be geared so much more toward CD ROMs. Again, seeing the friends from Quanta, Cats, and so forth meant more to me that buying stuff.

Now we come to the 95 Dayton show. This year was marred by the fact that those responsible for arrangements, advertising, and mailing out notices were not on the ball. I received notice of the show only a week or so before hand. There were fewer small vendors than before. There were many large vendors and plenty of good deals though. Quanta (Frank Davis, Paul Holgren) were there but were only able to get 1 table instead of the 3 or 4 that they wanted. I was a bit surprised to see that Microsoft was not better represented. Many vendors were selling Windows 95 but it was not advertised as much as I had expected.(ed. really!)

I did see a video frame grabber that I liked a lot called "Snappy", which is sold at Egghead for $199. It is real nice since you don't even have to open your computer to connect it! You just plug it into the printer port! You connect a video source such as a VCR or camera and press a button when you see a frame you like. Snappy then grabs it and sends it to your computer. It takes a bit of time to get the image to your computer screen due to the limits of the parallel port. The thing that makes it very attractive to me is that it should work great on my notebook computer!

There seemed to be less people than the past 2 years at this show. That made it a bit less crowded. Another high point was the cook out at Tim Swenson's house. Bob Swoger from SMUG showed up and even Gary Ganger was there for a little while. There were a few less people than last year but it was still great to see and talk to those Sinclair people I have known for many years. I for one, will be looking forward to next years shows. I understand there will be 2 shows next year. One March 16th &17th and the other in August. Tim Swenson says he will be definitely around for the Spring show but he may be re-assigned by August. JGD

Photos from the Dayton Show will be shown where we have the space in this issue of the Ramtop. Look for last year's Christmas meeting photo as well. This year the Christmas meeting and auction will be on the first Friday of December at the Euclid Sqare Mall.

On Installing Windows 95

By Neil Elias

August 24th 1995 was the day that Windows 95 was due to be released and contrary to the predictions of some, it was. I'd given up the idea of trying to get it immediately since I hate waiting in lines and decided that I would wait a few days. Instead of going to Comp USA, I went to look over a Wal-Mart store that had recently opened in Strongsville. Surprise! One of the first things that I saw was a stack of Windows 95 and no one waiting. Of course, I snapped it up But when I got home and opened the box my heart sank, THIRTEEN HIGH DENSITY DISKS! This looked like it would take forever to install.

Forever actually took about an hour. I had opted for the 'TYPICAL' set-up over the customized which meant that I would accept whatever the program saw fit to give me. The instructions emphasized that adjustments could be made later, a statement which actually turned out to be true!

There was a scary moment when a note on the screen indicated that Windows 95 had been successfully installed and that the computer was being re-set ..... I sat there and waited but nothing happened for what seemed an interminable time. I thought if it's going to take this long to boot-up ..... but eventually the Windows 95 screen appeared and everything seemed fine. It turned out that the long wait was so that everything could be checked out. It only takes between 30 and 45 seconds normally to boot up.

Oh, one other thing. I also installed SoftRAM which in effect doubled the memory from 4 meg. to 8. (4 meg hard ram and 4 meg soft ram)

The first thing that you learn is that there is no Program Manager or File Manager. Instead there is the Windows Explorer which seems to work quite well and is easily and quickly accessed at any time. There are no directories though, now we have folios. Everything is done with Icons and Menus. Windows 95 also has a use for the mouse's right hand button too.

Many features are carried over from Windows 3.1 some of these are CardFile, Calendar and the Calculator (regular and Scientific) and Solitaire and Minesweeper and Paint. Some things have been dropped and there are others in their place. For instance the Word Processor of 3.1 is gone and there is instead Word Pad. It is a somewhat simplified word processor which does not have a spell checker and does not allow footers or headers but is more than adequate for average chores. It does permit use of colors and various fonts and type sizes and can be quite useful.

There is also a simple text editor called NotePad. There are also many advanced features that will go unmentioned here since this is being written after only a few days experimenting with Windows 95 and besides some of those features hold no interest for me.

What I do especially like is the neatness of the desk and the fact that you merely click on the start button to bring up the 'Start Menu' and click on 'Shut

Down' when you quit. What about DOS programs? Just click on 'Run' and type the name of the file.

I am quite happy with Windows 95, it fulfills all my needs and wants and then some. It depends on what you expect and are looking for as to whether or not you will be happy. This brief article barely scratches the surface and there are many features still to be checked out and there are many that have been tried out but for which there is no room in this article such as 'Short Cuts' and the 'Task Bar' which permits to switch back and forth between programs, and quickly at that. I begrudge the time it takes to type out this article which time could be used to find out what other surprises are in store, but a promise is a promise.

The manual that comes with the disks is very brief, skimpy as a matter of fact and this in part accounts for the great number of books that were on the stands even before Windows 95 was released. On the other hand the 'HELP' feature of W95 is excellent and I have found an answer to most of my problems, so far.   N.C.E.

Above, Neil Elias and Greg Dupuy get ready for the Dayton Computerfest. Middle, Paul Holmgren sells a QL out of the back of his station wagon at Tim Swenson's House. Below, Tim Swenson's wife watches her daughter react to all of the Sinclair enthusiasts at their house. Left, the author of the TS 2068 Emulator.
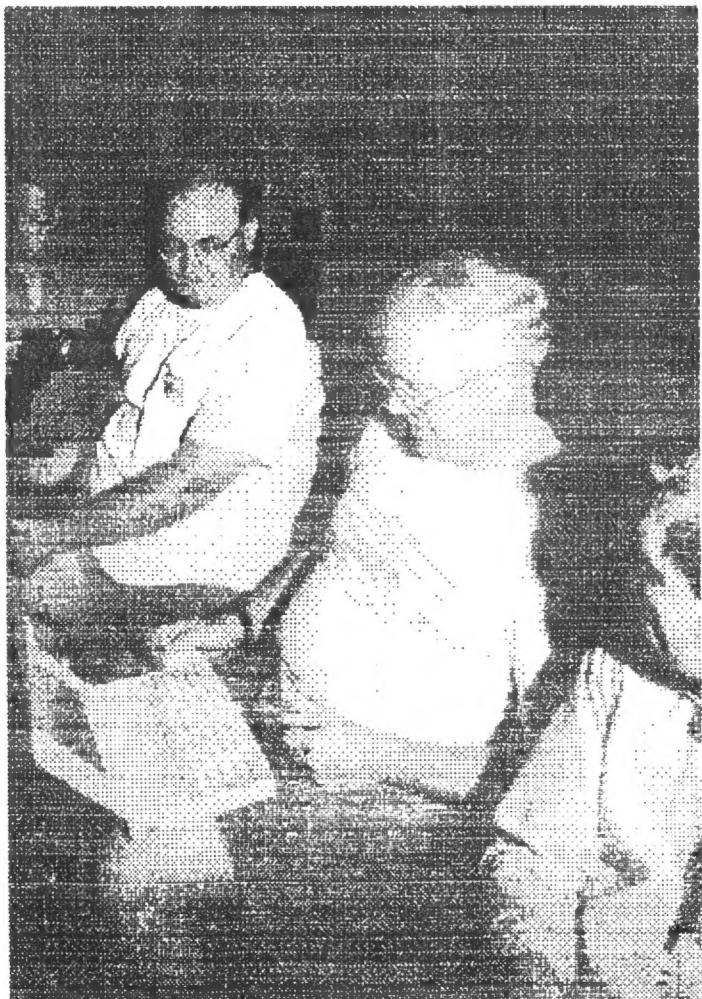
Pipeline USA

The Internet on $19.95 a Month

by Ron Hopkins-Lutz

Like everyone else I love a bargain. I've been managing to live without access to one of the major on line services through my NetCruiser Internet access account. Lately though I've been wanting my own Web page and Netcom doesn't offer that with a NetCruiser account. Shell accounts with other ISPs (Internet Service Providers) are a pain and most other SLIP accounts cost more money and give less access.

What's a cheapskate to do? One answer is Pipeline USA. As you'll see though it may not be a complete answer until Halloween.

Pipeline USA is a service offered by PSI, one of the largest providers of commercial Internet access. It rides on their back bones through a limited number of special nationwide POPs. (Points of Presence, a fancy way of saying, someplace you can connect to.) Cleveland and Akron both have one.

The service costs $19.95 a month billed to Visa, Mastercard, or American Express. You get unlimited access to the Internet, through v34 28,800 bps connections. You'll need a Windows PC. The service supports speeds down to 2,400 bps and through put via v34 up to 57,600 bps. They also offer a second plan at $5 a month for 5 hours and each additional hour at $1.50 an hour. This latter is for people who don't use the Internet very much or may have to maintain a presence on another service, but want to off load E-mail or some other services to a second account. It also offers a private access for

those who don't want it he system administrators at a job site access to personal transactions.

Pipeline USA is a standard Windows installation through Program Manager's File menu. Registration is on line and you can access the account 5 minutes later. Or at least you can. I happened to register on a morning when there were problems with the Cleveland POP. However I got the bright idea of calling the Akron number, even if it was long distance, and confirmed every thing was working fine.

The service requires you to use custom software but by Halloween they are bringing out new software that will let you use any Winsocket compatible program. You'll very probably need to.

The software is like every integrated program you've ever seen, not as good as any task specific program, but quite nice otherwise. It offers the ability to use your own word processor for some tasks, and has some nice features. It offers a Web browser, news reader for Use net, Gopher, Archie, Veronica, E-mail, FTP (download only at this point but changing with the new software), Telnet, and Internet Relay Chat. The interfaces for everything but the Web browser are simple and fairly easy to learn, though often not very intuitive.

One nice feature is the spelling checker. This is kind of odd in that the checker module comes with the software, but you have to download the dictionary. I was kind of resentful, until I realized that I had unlimited access. They also keep the dictionary updated when they find a better glossary file.

Another feature I really liked was that they put a Gopher up on screen. You don't realize that's what it is until you push one of the buttons. So for example, you push a button marked Entertainment and Games and you get more buttons going to sub topics, etc. It works very smoothly, but you do have to be connected. It uses a visual key to tell you whether you're looking at another menu, a Web site, a picture, etc. In may ways it's like a small on-line service, except the links are to many things at other sites.

Mentioning the Web sites brings up the worst aspect of Pipeline USA. The Web browser is almost unusable. Many sites it connects to, but then displays only the graphics, to only the text. Moving your cursor around finds links, but you have no idea what they mean. Pipeline is well aware of the problem and that's why the new software with a total new browser. If Web browsing is a primary use for you, wait a month before trying the service out.

And you do get to try it out. Their ads promise a free 7 day try out, and the software 14 days. That's unlimited access any time of the day or night.

Things I like -
- The off-line mail reader/composer is simple and fast.
- The news reader is a hierarchical system of folders,
- You can download updated everything lists, including categorized news group lists.
- They carry about 15,000 newsgroups.
- It's multitasking, and I can continue to do things while stuff transfers.
- Technical support is absolutely the best I've run into for this type of service. The people are knowledgeable and friendly and they actually answer. E-mail, the phone, and there is a six day a week chat session online.

Things I don't like -
- The connection part of the software and their POPs both seem to be sensitive to line problems. The result is that you may have to play with your initialization string if you don't have one of their listed modems. (This is based on newsgroup posting from other users, Once it's set up only a very bad line can knock you off.)
- The Help files are, well, idiosyncratic. Some topics are covered in great depth and some not even mentioned. (e.g. UUencoding is covered at great length under E-mail, but you don't even know you can decode and display a picture on line

- It's written in Visual Basic and can be slowwwww on some things.

Conclusions -
This is a great idea. The software is both better and worse that NetCruiser. The Web page space that will come with the new software makes it an unbelievable bargain. But that's the rub. Until new software arrives, if you want the Web, go elsewhere. I'm going to keep the account for the next month to see what happens with the Winsocket capability and their own software. I use Winsocket applications exclusively with my NetCruiser account and don't even remember how to use part of the provided software. If the promised changes come I'll drop Netcruiser, otherwise ... who knows, I may still want the Web page. As for you, this may be a very good deal if you're not into the Web right now or can wait a few weeks.

You can get the software by download from their web page at www.usa.pipeline.com or calling 1-800-453-PIPE for a free disk.

Notes from the Editor

Just a few quick bits of information for those who haven't been to our meetings lately. At a recent west side meeting Ted and Jon compared their respective Palmtops. Ted ran the Spectrum emulator as a demonstration. Jon showed how a Tandy PDD-2 worked on the Psion 3A. We found out that it would also read files written and saved from the Tandy 100, 200's to that disk drive. More on this later.

I have picked up a Z-88 and there should be more information about that machine in our newsletter now that I have one. Also I would like to thank the contributors for the articles this issue. I have decided to not continue running the article **Zen and the Art of the Internet** for two reasons. First much of the net is changing from the time when that article was written. Second the article itself is readily available through BBS's or the Internet itself.

Some information about the Spectrum Emulator from CIS
Q. Over the last few weeks we have become aware that new Pentiums seem to be giving troubles Likewise, The Disciple Emulation of the floppy drive fails as well.
A. It sounds like you have hit machines with EPP/ECP capability. Newer parallel ports have enhancements for use with ext devices like Ethernet adapters and tape drives. These are buffered (1K I think from memory). Probably your requests are being re-synchronized by the port itself on the way out (strobed by BUSY). See if changing the port type (CMOS on newer models, jumpers on older) makes any difference.

The ZX Spectrum 48/128 Emulator For IBM & Compatables: Z80 Version 2.01

Turn your PC into a real ZX Spectrum 48/128!
The fastest, most compatible and most complete
emulator available! Main features:

- Full Spectrum emulation, border, flash, beeper,
  Interface I, Microdrive in cartridge file, RS232 input
  and output redirection to file, COM or LPT, joystick
  support, 128K sound through Soundblaster or internal
  speaker, built-in monitor,
- Able to load ANY, even protected or speed-saved
  program from tape, to save to tape, to redirect tape
  loads and saves to disk for easy file access,
- 2500 line English documentation, frequently-asked-
  questions file, PostScript file of doc, keyboard help
  screen, utilities to convert Spectrum screens to .GIF
  and .PCX files, convert snapshot files and tape files
  from 5 other Spectrum emulators to own format and vv.,
  to read DISCiPLE and +D disks,
- Z80 processor emulation including R register, inofficial
  instructions, inofficial flags,
- Runs okay under DOS, Windows and DesqView,
- Full source code of emulator and utilities included!

Runs on any 640K PC; too slow for practical use on
PC/XT's but fast enough on AT's; runs at about 100%
on 16MHz AT's (can be slowed down on faster machines),
uses VGA/EGA/CGA or Hercules.

This program costs US$ 20. You will receive a 3.5" DD
disk (5.25" disks on request), and you'll be kept informed
about updates. Please send bank notes, name and address to:

Gerton Lunter
P.O. Box 2535
NL-9704 CM Groningen
The Netherlands

If you send a cheque, please add US$ 15. Please allow 4
weeks for delivery.

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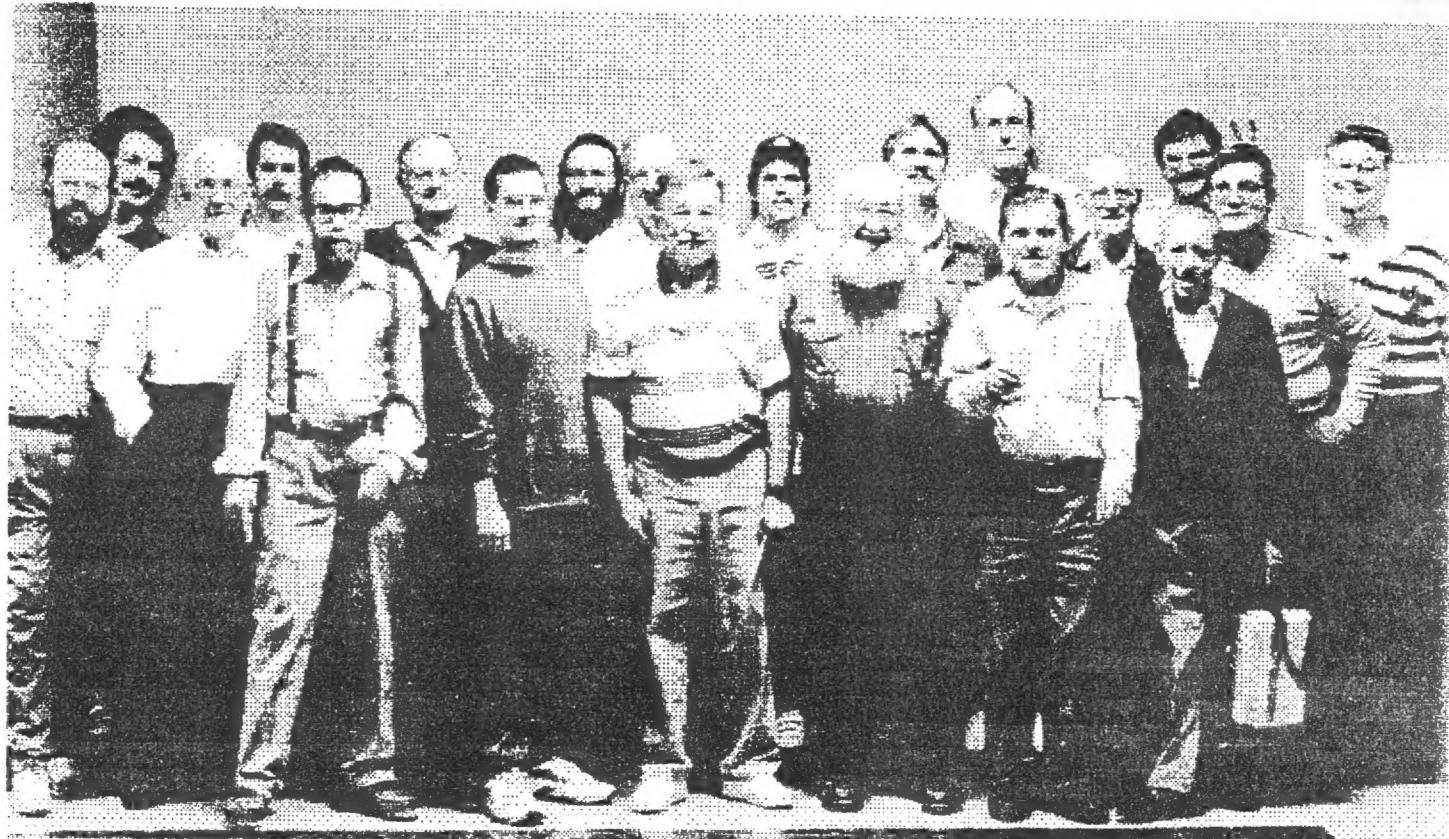
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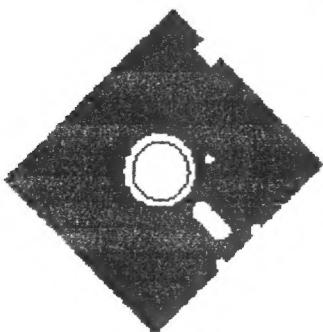
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